are, besides, neither indifferent nor useless, they help to shorten the text and to extend the object of geometrical conceptions; lastly, they establish a point of contact, if not always real, at least imaginary, between figures which appear—*prima vista*—to have no mutual relation, and enable us to discover without trouble relations and properties which are common to them."[1] It was the principle of geometrical continuity which led Poncelet to the consideration of infinite and imaginary elements.

As we saw above, the projective methods of Poncelet had introduced into geometrical reasoning a remarkable distinction among the properties of figures. In general it was recognised that, in the methods of central and parallel projection or in drawing in perspective, certain properties or relations of the parts of a figure remain unaltered, whereas others change, become contorted or out of shape. Poncelet called the former projective or descriptive, the latter metrical, properties. This distinction introduced into all geometry since his time several most important and fundamental points of view; it divided geometrical research into two branches, which we may term positional and metrical geometry—the geometry of position and that of measurement. We know that ancient geometry started from problems of mensuration: modern geometry started, with Monge, from problems of representation or graphical description. It has thus become a habit to call ancient geometry metrical, modern geometry projective. This habit has led to an unnecessary separation of views, but in the further course of development also

[1] 'Traité des Propriétés projectives,' vol. i. p. 28.